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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/530,196	08/22/2000	Nobuo Kimura	31981-160441	2129

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EXAMINER

JOHNSON, EDWARD M

ART UNIT	PAPER NUMBER
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1754

12

DATE MAILED: 03/25/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/530,196

Applicant(s)

KIMURA ET AL.

Examiner

Edward M. Johnson

Art Unit

1754

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 February 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) 21 and 22 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

Art Unit: 1754

DETAILED ACTION

Election/Restrictions

1. Applicant's election of Group I, claims 1-20 in Paper No. 11 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Specification

2. The disclosure is objected to because of the following informalities: In the Brief Description of the Drawings and throughout the Specification, the drawing is referred to as "Figure 1", which should be --the Figure--, since it is the sole figure in the Application.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Art Unit: 1754

Claim 1, line 4, "are having photocatalytic activity" is unclear as to what is being referred to and appears grammatically incorrect.

Claims 4 and 13-16 appear to contain improper Markush groups. Examiner suggests using the language, --selected from the group consisting of-- and linking the members with --and--.

Claim 7, line 5, "a coating solution" is unclear as to whether a second coating solution is being referred to. Examiner suggests clarification.

Claim 7, lines 8-9, "the coating solution" is unclear as to which solution is being referred to.

Claim 18, lines 6 and 8, "it" is unclear as to what is being referred to.

Claim 19, line 5 and claim 20, line 6, "the part of them" lacks antecedent basis.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Art Unit: 1754

6. Claims 1-5 are rejected under 35 U.S.C. 102(a) as being anticipated by WO98/43733 (U.S. Pat. No. 6,306,796 referred to for translation).

Regarding claim 1, Suzue '796 discloses a photocatalyst comprising a photocatalyst which is laminated as a film onto a substrate (see column 3, lines 33-40), which may be metal (see column 3, line 41; lamination involves heat and pressing). Suzue '796 does not irradiate UV rays in UV-A range at a strength of 3 mW/cm² under an atmospheric temperature of 25 °C and relative humidity of 70%, the conditions upon which the recitation "capable of decomposing triolein at a rate of 5 µg/cm²/day" is made contingent. Therefore, the claim is considered to be anticipated. Further, the recited physical properties appear to be inherent characteristics of the photocatalyst produced in the manner disclosed in Suzue '796, since it is produced with the same lamination step.

When the examiner has reason to believe that the functional language asserted to be critical for establishing novelty in claimed subject matter may in fact be an inherent characteristic of the prior art, the burden of proof is shifted to Applicants to prove that the subject matter shown in the prior art does not

Art Unit: 1754

possess the characteristics relied upon. *In re Fitzgerald et al.*
205 USPQ 594.

Regarding claims 2-3, Suzue '796 discloses various resins with silicate (see column 4, lines 1-8) and polymerization of the silicate (see column 6, lines 1-2).

Regarding claim 4, Suzue '796 discloses polyvinyl chloride (see column 5, lines 63-66).

Regarding claim 5, Suzue '796 discloses 20 microns (see column 5, lines 56-58).

7. Claims 1-18 are rejected under 35 U.S.C. 102(b) as being anticipated by WO97/00134 (U.S. Pat. No. 6,228,480 referred to for translation).

Regarding claim 1, Kimura '480 discloses a photocatalyst-carrying structure comprising a photocatalyst film laminated (see column 15, lines 44-46 and column 37, lines 12-15; laminating involves heat and pressing) onto a metallic substrate (see column 4, lines 8-9). Kimura '480 does not irradiate UV rays in UV-A range at a strength of 3 mW/cm^2 under an atmospheric temperature of 25°C and relative humidity of 70%, the conditions upon which the recitation "capable of decomposing triolein at a rate of $5 \text{ }\mu\text{g/cm}^2/\text{day}$ " is made contingent. Therefore, the claim is considered to be anticipated. Further, the recited physical properties appear to be inherent characteristics of the

Art Unit: 1754

photocatalyst produced in the manner disclosed in Suzue '480, since it is produced with the same lamination step. See *In re Fitzgerald et al.*, supra.

Regarding claims 2-4 and 13-17, Kimura '480 discloses a colored steel or aluminum plate (see column 13, lines 11-25), polyvinylchloride and polymethylmethacrylate resins (see column 14, lines 16-25).

Regarding claims 5, 9, and 12, Kimura '480 discloses 5 microns or less (see column 10, lines 57-63).

Regarding claim 6, Kimura '480 discloses a silane coupler (see column 7, lines 39-41).

Regarding claims 7, Kimura '480 discloses 0.001-5% silicon compound in the solution (see column 8, lines 58-61) and 10-50% silicon-modified resin (see column 8 lines 1-3).

Regarding claim 8, Kimura '480 discloses 0.001-5% silicon compound in the solution (see column 8, lines 58-61) and methyl trimethoxysilane (see column 9, lines 16-18) as silicon compound, which is in an amount of 0.001 to 5% (see column 9, lines 26-30).

Regarding claim 10, Kimura '480 discloses 0.1-30% metal oxide sol (see column 9, lines 52-53) and titanium dioxide in an amount of 5% (see column 33, lines 28-30 and Table 6).

Art Unit: 1754

Regarding claim 11, Kimura '480 discloses silica sol acidified with nitric acid (see Examples 74-77) 2-60% silicon and 5-40% colloidal silica (see column 3, lines 35-38).

Regarding claim 18, Kimura '480 discloses coating by dipping, drying the adhesive layer (see Examples 67-71), adding a silane coupler (see column 7, lines 39-41) and laminating (see column 15, lines 44-46 and column 37, lines 12-15).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO '134 (translation in Kimura '480).

Regarding claims 19-20, Kimura fails to disclose signboards and other signs.

It is considered that it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the photocatalyst film of Kimura on signboards and other signs because Kimura discloses applying the film to glass,

Art Unit: 1754

plastics, metals, wooden doors (see column 4, lines 5-12), cars, buildings, show cases, opaque material, wall papers, and decorations sheets, which would obviously, to one of ordinary skill, suggest signs or sign boards, which may be found on buildings, cars, and/or show cases (see column 14, lines 4-35).

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Hayakawa et al. 2002/0016250 A1 discloses photocatalysts and substrates comprising a hydrophilic photocatalytic coating produced by coating the substrate and disposing outdoors (see abstract), a duration of radiation vs. contact angle with water (see Fig. 9), and mixed with a silicone paint (see page 7, right hand column).

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edward M. Johnson whose telephone number is 703-305-0216. The examiner can normally be reached on M-F 6:30-4:00.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven P. Griffin can be reached on 703-308-1164. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Art Unit: 1754

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

EMJ

March 18, 2002


STEVEN P. GRIFFIN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700